

**SCHEME OF TESTING AND INSPECTION
FOR CERTIFICATION OF
ENGINE MONOSET PUMPS FOR CLEAR, COLD, FRESH WATER
FOR AGRICULTURAL PURPOSES
ACCORDING TO IS 11501:1986**

1. A testing section shall be maintained which shall be suitably equipped and staffed, where different tests and inspections given in the specification shall be carried out.

1.1 All the testing apparatus shall be checked periodically and records of such checks shall be maintained.

2. All records of tests and inspections shall be maintained in suitable forms approved by the Bureau.

2.1 Copies of any records and charts that may be required by the Bureau shall be made available at any time on request.

2.2 It is recommended that, as far as possible, statistical quality control (SQC) methods may be used for inspection and testing as envisaged in this scheme.[see IS:397 (Part I)-1972, IS 397(Pt.II) 1975 and IS 397(Pt.3):1980.

3. The Standard Mark as given in Column 1 of the First Schedule of the licence shall be applied on the name plate of each monoset pump; provided always that the monoset pump to which the marks is thus applied conforms to every requirement of the specification.

3.1 The Monoset shall be clearly marked with the following :

- a) Manufacturers Name or Trade mark (if any)
- b) Serial Number
- c) Engine rating and speed
- d) Size
- e) Total head
- f) Capacity
- g) Fuel consumption in g/h
- h) Maximum power consumption
- i) Head range and
- j) Capacity range.

3.2 The direction of the rotation of pumps shall also be clearly marked as per clause 6.1 and 6.2 of IS 11501:1986.

4. Suction limitations - Suction limitations affecting the performance of pumps for clear, cold, fresh water shall conform to those specified in IS 5120:1977.

5. Factors affecting pump performance – Factors affecting pump performance shall conform to those specified in IS 5120:1977.

6. Design Features – The pump engine elements of the set shall have suitable features properly designed to ensure satisfactory performance. In particular design features specified in Cl.9-1 a, b, & c shall be incorporated.

7. The tests as indicated in Table 1 and at the levels of control specified therein, shall be carried out on the whole production of the factory covered by this scheme and appropriate records and charts maintained in accordance with paragraph 2 above. All the production which conforms to the Indian Standard and covered by this licence shall be marked with ISI Certification Mark.

7.1 The diesel engine of the engine monoset shall be tested in accordance with the Scheme of Testing & Inspection Doc:STI/11170/1, August 1986 attached as annexure to this scheme. No testing is necessary if the engine carries ISI Mark.

8. In respect of all other clauses of the specification and at all stages of manufacture, the factory shall maintain appropriate controls and checks to ensure that their product conforms to the various requirements of the specification.

9. A separate record shall be maintained giving information relating to the rejection of engine monoset pumps which do not conform to the specification and the method of their disposal.

10. It is recommended that, as far as possible, each consignment of the raw materials should be accompanied by a test certificate, certifying its conformity to the relevant Indian Standards.

10.1 Gaskets, packings and seals used for clear, cold, fresh water Engine Monoset pump shall conform to the requirements specified in clause 5.2 of IS 5120:1977.

11. The licensee shall provide with each pump, all the essential accessories as laid down under clause 8.1 of IS 5120:1977.

12. The licensee shall supply, free of charge, the samples required in accordance with Regulation 12 of the Bureau of Indian Standards (Certification Marks) Regulations 1988, as subsequently amended from his factory or godowns. The samples of monoset Pumps so supplied would be returned to the licensee after the tests have been carried out. The transport charges shall be borne by the licensee. The Bureau shall pay for the samples taken by it from the open market.

13. **REPLACEMENT** - Whenever a complaint is received soon after the goods with ISI marks have been purchased and used, and if there is adequate evidence that the goods have not been misused, defective goods or their components are replaced or repaired free of cost by the licensee in case the complaint is proved to be genuine and the warranty period (where applicable) has not expired. The final authority to judge the conformity of the product to the Indian Standard shall be with the Bureau.

14. The marking of the product shall be suspended under intimation to the Bureau if, at any time, there is some difficulty in maintaining the conformity of the product to the specification, or the testing equipment goes out of order or if directed to do so by the Bureau for any reason. The marking may be resumed as soon as the defects are removed or when the Bureau gives the permission to do so. The information regarding resumption of marking shall also be sent to the Bureau.

15. The licensee shall send to the Bureau, as per the enclosed proforma-1, as per enclosed proforma-1, a statement of the quantity produced, marked and exported by him and the trade value thereof during the half year ending 30 June and 31 December. This statement is required to be forwarded to the Bureau on or before the 31st day of July and January for the preceding half year.

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HORIZONTAL CENTRIFUGAL ENGINE MONO SET PUMPS

IS 11501:1986

TABLE 1 - LEVELS OF CONTROL
(Para 7 of Scheme of Testing and Inspection)

Clause	Requirements	Test Method		Levels of Control	Remarks
		Clause	Reference		
11.3	PUMP SETS				
11.3.1 & 15.2	Performance tests and guarantee of performance (For total head & discharge rate measurement of different heads)	4,5,6,7	IS 11346:1985	As per scale given below	All the pumps of the same input manufactured under essentially similar condition in fortnight shall be grouped together to constitute a lot.
11.3.2 & 11.4	Fuel Consumption Test	11.3.2 11.4	IS 11501:1986	As per scale given below	-do-
5.1	Tensile test	10	IS 210:1978	Three of each melt	These tests are optional and are given for the guidance of the manufacturer, applicable to castings only
	Transverse test	11	-do-	-do-	
10.2	Hydraulic Pressure test, pump casing	10.2	IS 11501:1986	Each casing	Casing shall be of robust construction and tested to withstand 1.5 times the maximum discharge pressure.
10.1	General requirements	10.1	IS 5120:1977	Each monoset produced	-
10.3	Balancing of Impeller	10.3	IS 11501:1986	Each Impeller	The impeller shall be properly balanced alongwith any other un machined parts on proper balancing equipment.

If there is a failure, frequency of inspection shall be each sample, till the time three consecutive samples pass. For every failure, appropriate steps shall be taken for rectifying the cause of the defect in subsequent samples and record of the same be maintained

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TABLE 1 - LEVELS OF CONTROL (Contd.....)
(Para 7 of Scheme of Testing and Inspection)

First 5 Monosets, including prototypes, of any new type and design produced shall be subjected to all the tests given above at the completion of which the specified levels of control shall be implemented.

SCALE

No. of pumps in the lot	No. of pumps selected	Acceptance Number
Upto 100	5	0
101 to 150	8	0
151 to 300	13	0
301 to 500	20	0
501 to 1000	32	1
1001 and above	50	1

Table 2....

Doc:STI/11501/1,
December 1989

**HORIZONTAL CENTRIFUGAL ENGINE MONO SET PUMPS
IS 11501:1986**

ANNEXURE - I

**TABLE -2 LEVELS OF CONTROL
(Para 7 of Scheme of Testing and Inspection)**

Clause	Requirements	Test Method		Levels of Control	Remarks
		Clause	Reference		
	ENGINE TESTING	As per IS 11170:1985 and Scheme of Testing and Inspection- Doc: STI/11170/1, August 1986 (Scheme of Testing and Inspection for certification of constant speed, compression ignition (Diesel)engines for Agricultural purposes according to IS11170:1985 (copy enclosed)		Each diesel engine produced	No testing is necessary if engine is carrying ISI Mark.

Proforma-1....

PERFORMA - 1

PROFORMA FOR OBTAINING PRODUCTION DETAILS

Period covered

Name of Licensee

CM/L No.

Name of Articles (s)

IS No.

Grade/Type/Size/Variety/Class/Rating

1.1	Brand/Trade/Name(s) of BIS Certification Marked Products
2.0	Total production of the articles(s)
	Licensed for certification marking
2.1	Total production of the article(s)
	Conforming to Indian Standard
3.0	Production covered with BIS Certification Mark and its Value
a)	Quantity
b)	Value (Rs.)
3.1	Brand Name used on production covered under BIS Certification Mark
3.2	Calculation of marking fee on unit-rate basis; Marking Fee per unit
a)	Unit
b)	Quantity covered with BIS Certification Mark
c)	Marking fee rounded off in whole rupees as obtained by applying unit rates given in (a) on quantity given in (b)

Note: In case a clause is not applicable, suitable remarks may be given against it.

4.0	Quantity not covered with BIS Certification Mark. If any, and the reasons for such non-coverage
4.1	Brand Name under which non certified goods were sold
5.0	Quantity Exported with BIS Standard Mark and its value
5.1	Brand Name under which BIS Certified goods are exported